



California Water Quality Monitoring Council



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May 31, 2013

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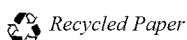
2012 PROGRESS REPORT AND RECOMMENDATIONS OF THE CALIFORNIA WATER QUALITY MONITORING COUNCIL

Dear Secretaries Rodriquez and Laird:

In 2012, the California Water Quality Monitoring Council made additional progress implementing our recommended *Comprehensive Monitoring Program Strategy for California* to improve the efficiency and effectiveness of our State's system for water quality and associated ecosystem monitoring, assessment, and reporting. But it is clear that compliance with Senate Bill 1070 (Kehoe, 2006) and the Memorandum of Understanding (MOU), required by that legislation remains a significant challenge for the Council and we need your direction and involvement.

While some of our theme-based workgroups are making tremendous strides in coordinating data gathering and public information dissemination, especially with respect to wetlands, streams and rivers, the San Francisco Bay-Delta estuary, and the bioaccumulation of pollutants in fish that people eat, others have not been as successful in their implementation and require a truly engaged interest from the appropriate departments, boards, commissions and conservancies named in the legislation. The vast majority of monitoring data and assessment information still reside in departmental silos, unavailable to other agencies or the public. Initiating and sustaining collaboration between governmental and non-governmental entities requires the expenditure of staff time. Breaking down the barriers to data and information sharing between organizations takes dedication of resources. A significant commitment by agency managers will be needed to overcome such impediments to the success of our efforts to attain the goal of monitoring information transparency to the public.

California Environmental Protection and Natural Resources Agencies



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Background

On November 26, 2007, the Secretaries of Cal/EPA and the Natural Resources Agency signed a Memorandum of Understanding (MOU) establishing the California Water Quality Monitoring Council (Monitoring Council) as required by California Senate Bill 1070 (Kehoe, 2006). Pursuant to this legislation, the Monitoring Council on December 1, 2008 sent to the Agency Secretaries our initial recommendations for maximizing the efficiency and effectiveness of existing water quality and associated ecosystem monitoring and assessment and for ensuring that collected data are maintained and available for use by decision makers and the public via the Internet. As mandated by SB1070 and the MOU and based on two years of experience implementing those initial recommendations, the Monitoring Council developed and sent to the Agency Secretaries on December 28, 2010 our recommended *Comprehensive Monitoring Program Strategy for California* to guide these activities into the future.

The Monitoring Council's comprehensive strategy endeavors to coordinate and enhance California's monitoring, assessment and reporting efforts by focusing first on providing a platform for intuitive, streamlined access to water quality and aquatic ecosystem information that directly addresses users' questions. Theme-specific workgroups, under the overarching guidance of the Monitoring Council, evaluate existing monitoring, assessment and reporting efforts and work to enhance those efforts so as to improve the delivery of water quality and associated ecosystem health information to the user, in the form of theme-based internet portals. To date, seven of these workgroups have been formed each addressing a high-level management question:

- ***Is our water safe to drink?***
Safe Drinking Water Workgroup, led by the Department of Public Health
- ***Is it safe to swim in our waters?***
Safe-to-Swim Workgroup, led by the State Water Board
- ***Is it safe to eat fish and shellfish from our waters?***
Bioaccumulation Oversight Group, led by the State Water Board
- ***Are our aquatic ecosystems healthy?***
 - ***Wetlands***
California Wetland Monitoring Workgroup, led by the Department of Fish and Wildlife, the U.S. Army Corps of Engineers, and the Southern California Coastal Water Research Project
 - ***Rivers and streams***
Healthy Streams Partnership, led by the State Water Board
 - ***Estuaries***
California Estuary Monitoring Workgroup, led by the State and Federal Contractors Water Agency and The Bay Institute
 - ***Ocean and coastal waters***
California Ocean Ecosystem Workgroup, initiated by the State Water Board and currently seeking long-term leadership

Each workgroup is staffed by issue experts representing key stakeholders from both inside and outside state government. To date, four of these workgroups have launched Internet portals to present coordinated monitoring data and summary assessment information for use by agency

decision makers, legislators, researchers and the public. All of the portals are accessible through the *My Water Quality* website, www.MyWaterQuality.ca.gov.

To assist each of the theme-specific workgroups with common data access, data management, geospatial analysis, and web development issues, the Monitoring Council formed a Data Management Workgroup in 2011. With the assistance of the State Water Boards' Clean Water Team, the Monitoring Council has also formed the Water Quality Monitoring Collaboration Network (WQMCN). The Network presents a series of monthly web-based seminars to allow members of the monitoring community, including local citizen monitoring organizations, to network and exchange information and ideas on topic of interest, including the sharing of technical and support tools for monitoring, assessment and reporting, information management and monitoring program development.

The Monitoring Council's strategy is about a lot more than just putting data up on the web. It is about forming lasting relationships between organizations and implementing a portal design that both require and motivate parties to solve monitoring and assessment coordination and data integration problems, with a focus on directly addressing management questions. The presence of these portals provides a conceptual structure that initiates dialogue between existing and emerging monitoring programs thereby providing the opportunity to think more broadly than they would otherwise do, and enabling broader-based assessments than were possible before.

Progress Is Being Made

As outlined in our last progress report, the Monitoring Council's Comprehensive Monitoring Program Strategy has been highlighted as a model for collaboration and data reporting. Clearly, the Monitoring Council's comprehensive strategy is working to improve the efficiency and effectiveness of California's water quality and associated ecosystem monitoring, assessment, and reporting efforts for those agencies and programs that have chosen to embrace the strategy. Recent progress is highlighted below.

- The California Wetland Monitoring Workgroup is a collection of twenty-three state, federal and local organizations jointly pursuing a number of focused coordination and standardization efforts designed to enable California to comprehensively assess the extent and health of its wetland ecosystems. Under the umbrella of its Wetland and Riparian Area Monitoring Plan, the workgroup has developed key tools including:
 - A comprehensive GIS layer of the State's waters called the California Aquatic Resources Inventory (CARI);
 - Standardized methods with which to identify, classify and map wetland habitats;
 - Methods to rapidly assess wetland health (California Rapid Assessment Method or CRAM); and
 - A web-based system to gather, manage, assess, and present wetland extent and health data as well as wetland restoration projects (Wetland Tracker, soon to become EcoAtlas).
 - EcoAtlas will soon become the driver for an upgraded California Wetlands Portals, soon to be released to the public.

Through the development of these tools, the Wetland Monitoring Workgroup is playing a key role in the State Water Board's efforts to build a comprehensive Wetland and Riparian Area Protection Policy (WRAPP). The workgroup is also working with the

State Water Board, the U.S. Army Corps of Engineers, and others to develop web-based tools to manage data for water quality certification and the permitting of dredge and fill projects, pursuant to Sections 401 and 404 of the Clean Water Act, respectively. Through the workgroup's outreach efforts, their tools are being used to assess wetlands involved in the planning and development of High Speed Rail, Delta Conveyance facilities, and Caltrans' Willits Bypass Project.

- The Bioaccumulation Oversight Group is about to release findings from the first statewide survey of contaminants in sport fish from California rivers and streams. This collaborative interagency effort assesses the accumulation of pollutants, such as mercury, PCBs and legacy pesticides in fish that people eat. The most recent study adds to results from this workgroup's earlier sampling of sport fish from California's lakes, reservoirs and coastal waters. Together, these surveys represent a major advance in understanding the extent of chemical contamination in California's aquatic ecosystems. They provide information that will be valuable in prioritizing areas in need of further study; supporting development of cleanup plans and fish and shellfish consumption guidelines; and providing information the public can use to be better informed about the degree of contamination of popular fishing spots.
- The Monitoring Council's Healthy Streams Partnership is working with U.S. EPA's Healthy Watersheds Initiative to develop the first ever multimetric systems-based assessment of the health and vulnerability of California's watersheds. Once complete, this map-based assessment information will be added to the California Healthy Streams Portal that was released to the public in mid-2012. This portal currently provides data and assessment information about the extent and condition of California's streams and rivers, including an interactive home-page graphic to educate the public about numerous factors that affect stream health.

Coordinating with the Healthy Watersheds Initiative effort through shared partners at UC Davis, the Department of Water Resources is developing a related set of sustainability indicators that will be critical to implementing the integrated water management goals of the 2013 Update of the California Water Plan.

- With the blessing of the Interagency Ecological Program Coordinators and managers of the Ecosystem Restoration Program, and significant resources from the State and Federal Contractors Water Agency, the California Estuary Monitoring Workgroup is working to coordinate data and assessment information from numerous sources about the San Francisco Bay-Delta Estuary. The workgroup has developed a set of innovative web-based tools that to help researchers and agency staff to develop stories based on key estuary data sets, research studies, maps, and related information. Their California Estuaries Portal, scheduled for public release by the end of 2013, will tell stories about the condition of major biological resources of this critically important estuary, the drivers of estuary health, and detailed data about the estuary's physical, hydrologic, and chemical condition.

Agency decision makers, legislators, researchers, and the public can obtain all of this information by navigating the question-based links of the Monitoring Council's *My Water Quality* website at www.MyWaterQuality.ca.gov. Highlights of recent progress by each of the Monitoring Council's workgroups implementing our recommended *Comprehensive Monitoring Program Strategy for California* are presented in the enclosed fact sheets. The comprehensive strategy document and additional information on the Monitoring Council may be found on the web at www.MyWaterQuality.ca.gov/monitoring_council.

Your Endorsement Is Still Needed

On January 13, 2012, the Monitoring Council sent you recommendations to resolve the State's lingering monitoring, assessment and data access issues. Although response to resolve these issues has increased in 2012, your assistance is still needed to insure the organizations in each of your agencies are engaged. Without your assistance and endorsement of the Monitoring Council's recommended *Comprehensive Monitoring Program Strategy for California*, and instructions to at least the eighteen departments, boards, commissions, and conservancies explicitly named in the legislation, all but one of which reside within your two agencies, it has become clear that the goals of SB 1070 cannot be realized.

As requested in the transmittal of our initial December 2008 recommendations, the Monitoring Council respectfully requests that you:

- 1) Endorse the Monitoring Council's strategy and empower the Monitoring Council to guide its implementation;
- 2) Direct the boards, conservancies, commissions, departments, and offices within Cal/EPA and the Natural Resources Agency to support and participate; and
- 3) Seek sufficient resources to ensure long-term sustainability of these efforts.

We would be pleased to make a presentation about the Monitoring Council, its strategy and workgroups, and the *My Water Quality* portals at one of your upcoming executive management meetings. We look forward to working with you and the organizations within your agencies to continually enhance the monitoring and assessment of California's water resources and aquatic ecosystems and the reporting of this important information to decision makers and the public via the Internet.

Sincerely,



Jonathan Bishop, Chief Deputy Director
State Water Resources Control Board
Monitoring Council Co-Chair
Representing Cal/EPA



Paul Helliker, Deputy Director
Delta & Statewide Water Management
Department of Water Resources
Monitoring Council Co-Chair
Representing the Natural Resources Agency

Enclosures (8)

cc: Members of the California Water Quality Monitoring Council

2012 Progress Report
California Wetland Monitoring Workgroup
November 30, 2012

Mission of the CWMW

To improve the monitoring and assessment of wetland and riparian resources by developing and fostering implementation of a comprehensive wetland monitoring plan for California through increased coordination and cooperation among local, state, and federal agencies, tribes, and non-governmental organizations.

Recommendations to the Council

The CWMW mission will allow California to implement recommendations of the 2010 State of the State's Wetland Report and will position the state to be able to more accurately assess wetland program activities in the next statewide report. The following recommendations are respectfully submitted to the Council to obtain support for this effort:

Recommendation 1: Agency secretaries should direct their boards, departments, and commissions to implement the Wetland Tenets (WRAMP) document through regulatory, assessment, and grant funded programs involving wetlands or streams.

Recommendation 2: The Council should direct the CWMW, the Data Management Workgroup and the other Ecosystem Health workgroups (currently estuaries and healthy streams) to develop a mapping strategy that will include common protocols and/or maps of streams, lakes, wetlands, and estuaries. The goal is to provide a mechanism that will result in a "common map" of aquatic resources for the State of California that can be used by the ecosystem health portals, EcoAtlas and other online information delivery systems as appropriate. The strategy should also address long-term management and stewardship.

Recommendation 3: The Council should identify agency or program resources for implementing training, quality control, and data management for the standard tools identified in the Wetland Tenets document, including the California Rapid Assessment Method (CRAM), and wetland and stream mapping.

Overall Assessment of Success of the CWMW

Over the past year, the CWMW has focused on building capacity for implementation of the Wetland and Riparian Area Monitoring Plan (WRAMP). Efforts focused on building capacity for wetland mapping and assessment of status and trends, development and refinement of several CRAM modules and improved data management tools, including a substantial update of the Wetland Portal and EcoAtlas. In addition, CWMW members continued to support early adopters of WRAMP to help build institutional capacity among both regulated entities and regulators for program implementation. A substantial challenge for CWMW continues to be allocating agency staff time for coordination activities and identification of mechanisms for long-term funding of implementation.

Implementation of the Wetland and Riparian Area Monitoring Plan

The goals of the WRAMP are to produce regular reports on trends in wetland, riparian and surface water extent and condition, and then to relate these trends to management actions, climate change, and other natural and anthropogenic factors in ways that help plan and protect the State's aquatic resources. The WRAMP is designed to be implemented through existing agency programs in a manner that supports decision making and information sharing between programs and agencies. *Because WRAMP does not reside at any one agency, dedicated staff support and funding through multiple partners benefitting from WRAMP will be necessary to*

ensure its long-term success. Staff from the State Water Resources Control Board are preparing a long-term implementation strategy and funding options in the form of an overall “business model.” This will be presented to the Monitoring Council in the upcoming year for their consideration.

The CWMW also accomplished the following over the past year:

- Served as the forum for statewide coordination of wetland and riparian monitoring and assessment;
- Provided oversight for the further development and implementation of CRAM and other rapid assessment methods through its Level 2 Assessments Committee (the “L2” committee meets at least quarterly and serves as the primary technical coordination entity for rapid assessment program development and implementation);
- Served as an inter-agency review body for technical memoranda produced by the Technical Advisory Team (TAT) for the State Water Board’s Wetland and Riparian Area Protection Policy (WRAPP), with substantial progress over the past year on stream/channel definitions (in coordination with CDFW), aquatic resource mapping protocols (CARI), and stream and wetland classification;
- Initiated identification of options for long-term CRAM training and data management, including the possible roles of the SWAMP Regional Data Centers, existing agency training programs, a dedicated new entity yet to be conceived (e.g. CASQA-like agency), existing JPAs and other NGO(s), and academic institutions..

Key activities toward implementation of the WRAMP are occurring in the following areas:

Level 1 (Mapping) is the Foundation of the Program

To support various emerging Level 1 activities, the CWMW has advised and reviewed efforts by the multi-agency CARI Technical Advisory Team (CARI TAT) to recommend aquatic resource mapping standards. In effect, the CARI TAT has served as the Statewide Level 1 committee. Over the past year, the first version of the CARI mapping standards including the new California Aquatic Resources Classification System was produced. Based on these standards, the first version of the California Aquatic Resources Inventory (CARI) was also produced. This initial version of CARI is based on a combination of the National Wetland Inventory (NWI) of the USFWS, the National Hydrography Dataset (NHD) of the USGS, and intensive mapping efforts by state and federal agencies in the San Francisco Bay Area, coastal Southern California, and central Sierra Nevada foothills, Tahoe Basin, and the Sacramento and San Joaquin Delta. A new map of the vernal pool landscapes of the Central Valley and adjoining foothills is also being incorporated. CARI is being reviewed by various local, state, and federal agencies for use in their programs.

The first phase of the wetland status and trends program (S&T) was completed this year. This program would use a probabilistic sampling design, similar to the one used by the National Status and Trends program, to estimate wetland extent and distribution throughout the state. This effort, plus CARI and the “401 online” tool that tracks permitted changes in wetlands, can fulfill the State’s need to track changes in wetland resources relative to regulation, management, and climate change, as called for in the State of the State’s Wetlands report. Additional USEPA funds have been received for Phase 2 of this program, which will include producing the first statewide S&T sample draw and initial implementation in approximately 200 S&T plots statewide. A more detailed implementation strategy for the S&T program is being developed by the California Natural Resources Agency, Department of Fish and Wildlife, and the State Water Resources Control Board.

Now that the CARI standards and an S&T plan have been drafted, the L1 Committee needs to focus on CARI stewardship and implementation. Further development of the L1 Committee for these purposes will be priority for the CWMW in 2013.

Level 2 (Rapid Assessment of Overall Condition and Stressors of Aquatic Areas) is the Key to Coordination

The CWMW has established a Statewide Level 2 Committee to guide the training, use, and further development of the California Rapid Assessment Method (CRAM). The L2 Committee operates under an L2 work plan that is subject to routine review and approval by CWMW. Since 2008 CRAM has been included in the State Water Board's Perennial Stream Assessment (PSA), as administered by the Surface Water Ambient Monitoring Program (SWAMP).

As part of this work plan, the L2 Committee has been developing a new version of CRAM (CRAM 6.1). It will be released prior to the 2013 field season. This new version includes a revised manual, standalone field books for each module, an online photo library to assist in the identification of field indicators of condition, and other online support tools.

The current L2 work plan reflects some essential coordination between development of L2 and L1 tools, namely CRAM and CARI, plus information delivery systems, including especially EcoAtlas. Key products and accomplishments of the L2 Committee during 2012 include:

1. Conducted 13 CRAM trainings for about 200 individuals at Central Coast, North Coast, San Francisco Bay, Central Valley, South Coast and Lake Tahoe/Sierra locations. Since 2007, 56 CRAM trainings have been conducted for 685 individuals. In 2012, 24 training requests were received via the online request form, which is an average of 2 requests per month. A total of 134 requests have been received since the online form was developed in 2009.
2. Uploaded 420 CRAM assessments into the CRAM database. This brings the database up to a total of 2,600 assessments on record, of which 1,329 are publically accessible.
3. Continued development of new or revised CRAM modules for vernal pools, depressional wetlands, bar-built estuaries, wet meadows, and arid-episodic streams through the efforts of regional teams comprised of a broad range of agency and academic technical staff. The L2 committee also coordinated an update of the riverine and estuarine modules to reflect feedback and lessons learned over the first five years of their widespread use.
4. Revised and updated CRAM implementation QA/QC procedures incorporating comments from the CalEPA peer review of CRAM. These procedures have been provided to the SWAMP roundtable and endorsement by SWAMP is pending. This will be the first endorsement for an assessment method not developed by SWAMP.
5. Produced a first draft set of CRAM "Frequently Asked Questions" regarding implementation of CRAM in a regulatory context.

Level 3 (Intensive Assessment of Condition or Stress of Aquatic Areas) Provides Additional Information

In general, the CWMW recognizes that L3 data are needed to assess particular aspects of wetland condition with regard to particular wetland functions or services, such as endangered species support, flood control, or water quality improvement. The exact needs for L3 data tend to vary from place to place, and from program to program. In many cases, Level 3 data are necessarily case-specific. Rather than try to coordinate or standardize L3 data collection and management across its diverse sources and uses, the CWMW has focused on developing L1 and L2 tools, and on how L1 through L3 data can be used in combination to improve wetland and stream assessment. For example, Level 3 data are being used to validate CRAM modules for vernal pool systems, depressional wetlands, and bar-built estuary wetlands, according to the established process for module

development. SWAMP has incorporated CRAM into its Perennial Stream Assessment, providing opportunities to analyze how CRAM and Level 3 methods (benthic macroinvertebrate IBI, stream algae IBI, and physical habitat assessment (PHAB) can be used together to improve the overall efficacy of the stream surveys. The results of this analysis should be available in 2013. In addition, the San Diego, Santa Ana, Los Angeles, and San Francisco Bay Regional Water Boards are conducting an ambient assessment program for depressional wetlands (funded and coordinated through SWAMP). This program includes refinement of the depressional module of CRAM and adaptation of existing Level 3 indicators (e.g. aquatic invertebrates and benthic diatoms) for use in depressional wetlands.

Data and Information Management

Significant upgrades have been made to all parts of the Wetlands Data and Information Management systems over the past year.

1. A substantial update of the California Wetlands Portal was completed this year and will be launched in the first quarter of 2013. The Wetlands Portal will have new content to better answer the primary questions: Where are the wetlands? and How are they doing?, with links to WRAMP output. The new portal will also conform to the standard My Water Quality portal design guidelines.
2. As agreed upon by the CWMW, the Wetland Tracker data management system has been renamed EcoAtlas and further developed with expanded contents and functionality to support alternatives analyses under CEQA/NEPA and mitigation planning under USESA/CESA, USCWA, and Phase 1 of the proposed Wetland Area Protection Policy of the State Water Board. The EcoAtlas will be released in the first quarter of 2013 and will include new tools to store and serve information on wetland, stream and riparian extent, condition, and management actions at the project, watershed, regional, and statewide scales. The first release of the California Aquatic Resources Inventory (CARI) will serve as the base map for EcoAtlas.
3. The CWMW has recently begun meeting with the Data Management Workgroup, the Healthy Streams Partnership and the California Estuary Monitoring Workgroup to develop linkages between the various workgroups and their portals. The initial efforts will focus on evaluation of how CARI might serve the needs of each of the ecosystem health workgroups.
4. As a standalone CRAM support site, www.Cramwetlands.org will be re-launched in 2013 (after the release of CRAM 6.1) with greatly improved data content and management functions. The CRAM database has been re-designed to support reference site designations, better tracking of training activities, and repeat assessments of CRAM Assessment Areas over time. This site will also provide improved access to training information and materials, and a section for information on the L2 Committee. A new version of eCRAM, the online data entry tool for uploading CRAM data, will also be released in 2013. The eCRAM upgrade includes an improved online mapper that allows users to edit and copy their maps of assessment areas, and more user-friendly forms for entering and editing assessment data.

WRAMP Pilot Projects and Early Implementation

The WRAMP framework, its component L1, L2 and L3 tools, and its data management systems continue to be revised and improved through pilot projects and early implementation efforts. Major projects that have begun using WRAMP for either alternatives analysis or mitigation planning include the Highway 101 Bypass at Willits (Caltrans), the Delta Conveyance Project (BDCP), and High Speed Rail (High Speed Rail Authority). During 2012, local and regional agencies have planned or completed watershed assessments using WRAMP in the Tahoe Basin and Santa Clara Valley. A watershed assessment based on WRAMP is being planned for a major tributary of the Russian River. Additional implementation is likely to follow from these efforts.

Attachment 1 - List of Agencies Participating in the CWMW**State Agencies**

- ☐ California Coastal Commission
- ☐ California Department of Fish and Wildlife
- ☐ California Department of Parks and Recreation
- ☐ California Department of Water Resources
- ☐ California Natural Resources Agency
- ☐ California State Lands Commission
- ☐ Central Coast Regional Water Quality Control Board
- ☐ Central Valley Regional Water Quality Control Board
- ☐ Los Angeles Regional Water Quality Control Board
- ☐ San Diego Regional Water Quality Control Board
- ☐ San Francisco Bay Regional Water Quality Control Board
- ☐ Santa Ana Regional Water Quality Control Board
- ☐ State Water Resources Control Board
- ☐ California Department of Transportation

Federal Agencies

- ☐ National Marine Fisheries Service
- ☐ Natural Resources Conservation Service
- ☐ U.S. Army Corps of Engineers
- ☐ U.S. Environmental Protection Agency
- ☐ U.S. Fish and Wildlife Service

Other Agencies and Entities

- ☐ Roberts Environmental and Conservation Planning
- ☐ Central Coast Wetlands Group at Moss Landing Marine Laboratories
- ☐ San Francisco Estuary Institute
- ☐ Southern California Coastal Water Research Project

NOTE: Many additional agencies, universities, private consultants and non-governmental organizations – too numerous to list – provide input to CWMW indirectly through participation with regional assessment development projects associated with the Level 2 committee.

2012 PROGRESS REPORT

Bioaccumulation Oversight Group (BOG)

BOG Mission

The mission of the BOG is to implement the “Strategy for Coordinated Monitoring, Assessment, and Communication of Information on Bioaccumulation in Aquatic Ecosystems in California” (Bioaccumulation Oversight Group 2012). The goals of the Strategy are to promote:

1. coordinated, cooperative, long-term, statewide monitoring to generate the data needed to support control plans and exposure reduction;
2. consistent and timely assessment to support more coherent regulation and to support exposure reduction for humans and aquatic life (including wildlife), and
3. coordinated communication and access to information on fish contamination to allow the public to reduce their exposure to contaminants and to participate in management processes in an informed manner.

BOG Accomplishments in 2012

The BOG’s initial five-year SWAMP workplan consisted of a series of statewide surveys of contaminants in sport fish in California’s freshwater lakes and reservoirs, coastal waters, and rivers and streams. We have completed four years of this five-year workplan. The monitoring consists of surveying all water body types in California supporting the fishing beneficial use. The sport fish monitoring work completed so far includes a two-year survey of freshwater lakes and reservoirs and a two-year survey of coastal waters. The goal of these studies is to assess the status of contaminant impacts on California’s fishing resources. In 2012 the BOG began the transition to an expanded workgroup to address larger issues important to the California Water Quality Monitoring Council and the broader topic of bioaccumulation in California water bodies in general.

Accomplishments in the Past Year

- Completed a strategy document: “A Strategy for Coordinated Monitoring, Assessment, and Communication of Information on Bioaccumulation in Aquatic Ecosystems in California” (Bioaccumulation Oversight Group 2012).
- With funding from SWAMP, convened a statewide symposium on bioaccumulation in California that was attended by almost 200 people. Presentations from the meeting are available at http://www.sfei.org/calendar_events/Symposium . The symposium generated a great deal of interest in the BOG and greatly expanded the list of BOG participants.
- With funding from SWAMP and the State Water Board Training Academy, and support from SCCWRP, convened a two day workshop on monitoring cyanotoxins in freshwater habitats in California. The workshop was well attended (approximately 150 people on day one, and 50 people on day two), and received very favorable reviews from attendees. Presentations from the meeting are available at http://www.sfei.org/SWAMP_cyanotoxin_workshop The

workshop was a major step forward in developing a coordinated strategy for monitoring biotoxins in California.

- Continued to expand the Safe to Eat Fish Portal: expanded the available data accessible to the public on the “Safe to Eat Fish” Portal page, including the data added from the second year of the Coast Survey.
- Data from the coast survey were fed into CEDEN. The Safe to Eat Portal draws data from CEDEN.
- With BOG oversight, SWAMP produced a report and fact sheet on results from the two-year statewide screening survey of contaminants in sport fish from California coastal waters. The report, *Contaminants in Sport Fish from the California Coast, 2009-2010*, represents a major step forward in understanding the extent of chemical contamination in sport fish on the California coast. The study has provided information that will be valuable in prioritizing areas in need of further study, will support development of consumption guidelines and cleanup plans, and provides information the public can use to be better informed about the degree of contamination of their favorite fishing spots. The report received extensive coverage in the media, including the front page of the San Francisco Chronicle and Forum with Michael Krasny on KQED.
- With BOG oversight, SWAMP completed the chemical analysis of sport fish for a one-year screening survey of bioaccumulation in California rivers and streams. These data will be reported and distributed via the Portal in 2013.

Coordination Highlights

Historically, the BOG has promoted coordination of sport fish monitoring among many programs, including SWAMP, Regional Water Board Programs, the San Francisco Bay Regional Monitoring Program (RMP), and the Southern California Bight Regional Monitoring Program. This coordination has allowed the BOG to expand the amount of data collected and the analysis for our statewide sport fish surveys. The BOG has also facilitated coordination of wildlife monitoring in association with the SWAMP study of mercury bioaccumulation and risks to birds, which is being conducted in partnership with the USGS and the USFWS.

Plans for 2013

In 2013, the BOG plans to accomplish the following:

- Continue implementation of the Bioaccumulation Strategy. Convene quarterly meetings of the BOG with an expanded participant list. Form partnerships with the major bioaccumulation programs in California. Follow through on actions outlined in the Strategy.
- Provide oversight on production of a SWAMP report on results from the statewide screening survey of contaminants in sport fish from California rivers and streams.

- Provide oversight for SWAMP monitoring and monitoring workplan development, including the second year of a survey of mercury risks to birds in lakes and reservoirs. Develop a monitoring plan for 2014.
- Continue to expand, refine and improve the Safe to Eat Fish portal page:
 - Incorporate the new data from the rivers and streams sport fish study.
 - Develop means of displaying data from the SWAMP wildlife study.

Agencies Participating (or Targeted for Participation) in the BOG

- State Agencies
 - State Water Board
 - ☐ SWAMP
 - ☐ TMDL
 - ☐ Standards
 - ☐ FERC
 - ☐ NPDES
 - ☐ Ocean
 - Regional Water Boards
 - ☐ Region 1
 - ☐ Region 2
 - ☐ Region 3
 - ☐ Region 4
 - ☐ Region 5
 - ☐ Region 6
 - ☐ Region 9
 - OEHHA
 - DPH
 - DWR
 - CDFG
- Federal Agencies
 - USEPA
 - USFWS
 - USACE
 - USBR
 - US Forest Service
 - National Park Service
 - USGS
 - NOAA
- Other Groups
 - Tribes
 - Utilities and Water Districts
 - ☐ SFPUC
 - ☐ Santa Clara Valley Water District

Bioaccumulation Oversight Group 2012 Annual Report

- ☐ EBMUD
- ☐ PGE
- ☐ SFEI
- ☐ SCCWRP
- ☐ Universities
 - ☐ UC Davis
 - ☐ CSU Water Resources Policy Initiative
- ☐ Permit holders
- ☐ Grantees

2012 ANNUAL REPORT

California Estuary Monitoring Workgroup (CEMW)

CEMW Mission

The California Estuary Monitoring Workgroup (CEMW) is devoted to evaluating existing estuarine resource monitoring, assessment and reporting efforts, and working to enhance those efforts so as to improve the delivery of water quality and ecosystem health information to the user, in the form of the California Estuaries Portal (Portal). The CEMW will endeavor to improve the monitoring, assessment, and reporting of estuarine resources by increasing cooperation, coordination, and collaboration among local, state, and federal agencies, tribes, and non-governmental organizations involved in the monitoring of water quality and ecosystem health of California's estuaries. The CEMW will review technical and policy aspects of estuarine resource monitoring, tool development, implementation, and use of data to improve estuarine resource management in California.

CEMW Accomplishments in 2012

In 2012 the CEMW:

- Launched the California Estuary Workgroup Website as a venue for Bay-Delta scientists to work together using data generated through existing monitoring and research programs, to develop a better understanding of the Bay-Delta Estuary, and to provide a platform to create and vet content for display on the Portal. Future plans include expanding the tools provided by this website to encompass other estuaries of the state.
 - The website includes project management tools and summaries, document management capabilities, data sets generated through the Interagency Ecological Program and other relevant programs, live conditions from real-time data sources, mapping and GIS layers, data visualization tools, and knowledge Wikis.
- Converted the Department of Water Resources annual publication, "Water Quality Condition in the Sacramento-San Joaquin Delta and Suisun and San Pablo Bays," into digital formats that will allow for more effective and efficient transfer of information to interested parties through the Portal and support assessments relevant to the Portal. These data have been collected since 1970 to fulfill the reporting requirements of monitoring required by the State Water Board's Water Right Decision-1641 and its predecessors.
- Increased collaboration among interested parties.

Plans for 2013

In 2013, the CEMW plans to:

- Develop a metadata plan for the first release of the Portal
- Mock-up the California Estuaries Portal

- Further develop a storyboard for answering the question, “How healthy is my estuary?” for general public consumption. The storyboard will be drawing on previous indicator work, and will be vetted through peer review.
- Present the mock-up of the Portal to the Monitoring Council for approval
- Release the Portal to the public
- Develop a metadata plan for longer-term Portal development
- Continue to improve and update the CEMW website with new and pertinent information
 - Continue to improve and develop tools through that support data analysis and reporting
 - Continue to collaborate with interested parties in developing the CEMW website to benefit users’ management and reporting needs
- Continue to improve and update the Portal
 - Develop a lines of evidence approach for controversial topics
- Identify and track performance measures for the estuary
 - Performance measures of landscape-scale habitat restoration will start with indicators of interest to the Fish Restoration Program Agreement (FRPA; <http://www.water.ca.gov/environmentalservices/frpa.cfm>) and water quality, starting with indicators incorporated in the Delta Regional Monitoring Program’s “Pulse of the Delta.”
 - Performance measures will also evaluate indicators of general estuarine health that are not tied to particular restoration projects
 - Performance measures will adapt previous work from the Unified Monitoring Assessment and Reporting Program and the Logic Chain. The Logic Chain links ecosystem goals to objectives that are Specific, Measurable, Achievable, Relevant (to larger ecosystem), and Time-Bound (S.M.A.R.T.). SMART objectives enable management to chart a course towards restoration while adapting to a changing knowledge base.
- Seek and develop opportunities for enhanced integration with other workgroups and Portals (e.g., California Wetlands Monitoring Workgroup, Healthy Streams Partnership).

Agencies Participating (or Targeted for Participation) in the CEMW

- State Agencies
 - Delta Conservancy
 - Delta Science Program of Delta Stewardship Council
 - Department of Water Resources
 - Department of Fish and Wildlife
 - State Water Resources Control Board
- Federal Agencies
 - US Environmental Protection Agency
 - US Geological Survey
- Other Groups
 - Delta Regional Monitoring Program

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- Interagency Ecological Program
- Sacramento Regional County Sanitation District
- San Francisco Bay Regional Monitoring Program
- San Francisco Estuary Institute-Aquatic Science Center
- Southern California Coastal Water Research Project
- State and Federal Contractors Water Agency
- The Bay Institute

2012 PROGRESS REPORT

Healthy Streams Partnership (HSP)

HSP Mission

The Healthy Streams Partnership (HSP) is devoted to monitoring and assessing the quality of California's stream and river ecosystems and bringing the resulting information to decision makers and the public via the Internet. A major intent of the HSP is to promote the protection of California's healthy streams and the restoration of threatened and impaired streams by informing resource management perspectives, decisions and actions.

HSP Accomplishments in 2012

In 2012 the HSP:

- Launched the [Healthy Streams Portal](#) to present information about the extent and condition of California's stream and river ecosystem resources. The portal makes information from statewide monitoring programs such as the [Surface Water Ambient Monitoring Program](#)'s Bioassessment and Stream Pollution Trends Monitoring Programs available to other agency water quality and resource protection programs.
- Participated in the USEPA's [Healthy Watershed Initiative](#) (HWI) California Project. USEPA is funding a multi-metric assessment to identify California's healthy watersheds. Data and project guidance are being provided by California's Healthy Streams Partnership. When completed, the results of this effort will be made available through the Healthy Streams Portal.
- Coordinated with the Central Coast and San Diego Regional Water Boards in their efforts to begin developing indices of overall stream and river condition and displaying their regional monitoring data in a report card format.

Plans for 2013

In 2013, the HSP plans to:

- Continue to improve and update the Healthy Streams Portal with new and pertinent information.
- Display the results of the HWI project in California on the Healthy Streams Portal.
- Apply the results of the HWI to support related efforts such as the development of a statewide [biological objectives policy](#).
- Continue to support development of regional watershed report cards and encourage integration of regional efforts into a statewide approach.
- Work with other agencies and programs to identify partnership opportunities and implement collaborative projects.
- Participate in the multi-workgroup effort to evaluate the [California Aquatic Resources Inventory](#) (CARI) map and mapping standards.

2012 Annual Report

Safe Drinking Water Workgroup

Mark Emmerson, Chair
Safe Drinking Water Workgroup

Summary

Work is progressing on the Safe-to-Drink Portal as a welcomed addition to the My Water Quality web sites. The Safe Drinking Water Workgroup has met and agreed upon eight questions on which to focus content, with concurrence of the California Water Quality Monitoring Council, to answer “Is my water safe to drink?” To date, a draft Storyboard has been developed by the Water Education Foundation (WEF) based upon answers to the focus questions, the basis provided by workgroup participants, with a visual site mockup constructed by the Southern California Coastal Water Research Project (SCCWRP). It is anticipated that a presentation of the storyboard will be presented to the Council at their March meeting.

Background

Efforts of the Safe Drinking Water Workgroup began in November 2011 at which time a vision of the portal design and content was presented by the Drinking Water Program (DWP) at the Department of Public Health (CDPH). Highlighting each member agency’s role in bringing safe drinking water to the user, including water supply reliability, source water quality assessment and protection, water treatment, and finished water quality testing, the workgroup identified a key concern of obtaining sufficient resources to effectively design the site, such as a funding mechanism involving a Supplemental Environmental Project (SEP) tied to one or more Cal/EPA enforcement actions. Identification of a potential SEP project proved ineffective, and with good fortune, for ‘Budget Dust’ from the State Water Board’s FY 2011-12 budget in the amount of \$50 K has since provided sufficient monies with which to fund the project. The WEF, as a subcontractor to SCCWRP, is tasked with the design of the site – to tell the story of how safe, clean, potable water is provided to California consumers.

Work Efforts

The SWRCB has augmented an existing contract with the SCCWRP to include site design, construction, and launch of the Safe-to-Drink Portal. Key staff to the effort includes representatives of the CDPH Drinking Water Program, this program supplying key information about the quality of drinking water and characterization of drinking water providers. An agreement was also entered into with the WEF for researching,

procuring, and copywriting site content as well as facilitating the eventual marketing of the site to various audiences.

The Workgroup met in July to formulate focus questions, per the Council's portal guidelines, and decided on developing content in answer to the following questions:

- ☐ Is my tap water safe to drink?
- ☐ What is the source of my water?
- ☐ What is in my drinking water?
- ☐ How is my drinking water treated?
- ☐ How is my drinking water made safe?
- ☐ What are the government standards?
- ☐ What agencies are involved with water quality protection?
- ☐ How safe is groundwater? Surface Water?
- ☐ Drinking water FAQ
- ☐ Who do I contact about my water?

Questions and example content was presented to the Council at its January meeting; the question focus points being ratified. Since the time of the meeting, proposed site content and navigation has been developed and a preliminary site mockup template constructed based upon this content and navigation schema. As of early February, the proposed content and schema will be released to the Workgroup for comment and subsequent modification. It is anticipated that this will form the basis for the storyboard that will be presented to the Council for approval at their March meeting.

The CDPH DWP has been in the process of finalizing the data intake mechanism that will be required to keep the site current. This work effort includes:

- ☐ Procuring, configuring, testing, and launching the hardware infrastructure that will be necessary to host the portal, the hosting location at the UC Davis, Information Center for the Environment – the cost of operation borne by the CDPH DWP
- ☐ Development of the hosting environment that will be based upon the DotNetNuke (DNN) content management system architecture
- ☐ Characterization of the business processes that will supply information in support of the portal

Next Steps

Anticipating that the WEF, SCCWRP, and the workgroup are successful in presenting an adequate storyboard at the Council's March's meeting that would authorize construction of a mockup Safe-to-Drink web portal, the next steps are anticipated to be the following:

- ☐ Construction of the portal page templates that will be used as the base in which content modules will be placed
- ☐ Training of WEF, SCCWRP, and workgroup staffs on methods and procedures populating the portal with new and modified content
- ☐ Dynamic integration of datasets serving as the information base of the portal site content
- ☐ Implementing internal and external navigation schemes
- ☐ Release of the site to the workgroup for review and comment with subsequent modification
- ☐ Documenting processes and procedures that will facilitate site sustainability
- ☐ Release of the site to the Council for review and comment
- ☐ Formulation of the marketing campaign advertising availability of the site for use by the public and other stakeholder audiences

With very little good fortune, it is anticipated that the contract end date of June 30, 2013 will be met with at least availability of the site for review and comment by Council members.

Safe to Swim Workgroup 2012 Progress Report

The purpose of the group is to coordinate the monitoring and assessment of issues affecting swimming safety and also to report that information to decision makers and the public through the [Safe to Swim Portal](#).

The Safe to Swim Workgroup did not hold any meetings in 2012. The last meeting was November 28th 2011.

BeachWatch Database

The new BeachWatch Database has been online since late 2011. BeachWatch is hosted directly at the Southern California Coastal Water Research Project (SCCWRP) and has created a more user-friendly and efficient upload platform for coastal county health agencies that are required to perform beach bacterial indicator monitoring. It now incorporates more user requested features to encourage more frequent data entry and will directly upload beach data to USEPA on a more frequent basis than the annual requirement. Since early 2012 this new database has feed data directly into the [California Environmental Data Exchange Network \(CEDEN\)](#). This should allow CEDEN to become the new data source for the [Safe to Swim Portal](#), allowing concurrent display of bacterial indicator monitoring data from both coastal and inland waters.

Workgroup Prioritizations

To ensure that the [Safe to Swim Portal](#) will best serve California, the workgroup decided in 2011 to address two primary questions:

1. What do agency decision makers and the public really want to know about swimming safety on a local, regional and statewide basis?
2. How can we best inform decision making?

To assist the Safe to Swim Workgroup the Data Management Workgroup identified several specific questions which will help address how the primary two questions are answered

- What are the problems in data management?
- What data sets should be a priority for access?
- Where are the data gaps?
- What data restrictions currently exist?

The Safe to Swim Workgroup produced a priority list of information and tasks which will help address public desires. This priority list identified 13 items of interest amongst 3 separate Safe to Swim categories:

- What are the current threats to my beach water quality?
- Is it safe to swim at fresh water beaches?
- What water quality data are available?"

Prioritized Tasks

Near the top of the priority list was the inclusion of bacterial indicators of swimming safety from inland waters. The new data management system, including the new BeachWatch database, its data feed into CEDEN, and having CEDEN feed data to the [Safe to Swim Portal](#) will allow inland bacterial indicator data and inland water swimming safety to be evaluated and displayed in the portal. The workgroup will develop a plan to effectively evaluate and display inland water swimming safety data and assessment information.

Work towards addressing the top public priorities was initiated. Although the priority list gave the Workgroup a good start towards addressing the two priority questions, it was decided that the Workgroup will initiate informational surveys to best determine agency and public resource manager needs, resources and mandates. Progress towards developing survey tools and addressing “what agency decision makers want to know about swimming safety on a local, regional and statewide basis and how to best inform decision making” was initiated in 2012 and a workgroup meeting to review and discuss the survey is needed before sending it to the wider data community.

Safe to Swim Workgroup Participation

There were 15-20 members of the workgroup. Members come from the county health agencies, the State and Regional Water Boards, NGOs, data center experts and USEPA. At the last meeting it was planned to increase the frequency of meetings so that the Workgroup can have greater efficacy in its mission. This was not accomplished in 2012.

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California Water Quality Monitoring Council

Data Management Workgroup

2012 Progress Report

(2/7/2013)

Purpose of the DMWG

The DMWG provides expertise to establish the overall approach to make use of and integrate existing data management systems into a distributed system of databases, catalogs, and assessment and mapping tools to enable users to access data, metadata, and assessment products from a single entry point, or web portal. In support of the Council's Comprehensive Strategy, key responsibilities of the DMWG include.

- Assist Monitoring Council workgroups identifying methodologies for assessing data needs and quality.
- Assess and recommend best practices for development of structured data formats and data management strategies complying with appropriate national and state guidelines.
- Identify data that cuts across multiple themes and opportunities to coordinate and share these data among workgroups.
- Assess and recommend IT tools and standards facilitating development of portals meeting Monitoring Council web development guidelines.
- Serve as a resource to assist other workgroups to evaluate technologies in the areas of data management, web applications and geospatial information management.
- Serve as a resource to workgroups for communicating, and where necessary, translating into clear, non-technical language recommendations regarding data management in support of individual workgroup's efforts.

Overall Assessment of Success of the DMWG

During its initial eighteen months, the DMWG has focused on establishing itself as a workgroup. We have successfully developed a charter to guide the workgroup's structure and function. The workgroup spent much of the first year developing a common understanding of technologies and data used in existing portals and an overview of technologies available to support existing and new workgroup portals into the future.

Our primary challenges in the coming year will be to identify emerging data and technology needs of the workgroups and to assist them in coordination of efforts around common interests. Two specific examples will be the development of a common thematic map layer for water resources as well as the selection and implementation of mapping technologies behind the existing and newly developing portals.

Workgroup formation and process

During the summer of 2011 a list of potential workgroup members was developed, representing data management experts from agencies, industry, academic and non-profit sectors. Invitations were initially sent to 29 individuals representing 15 organizations. The initial meeting of the DMWG was held in August 2011. Over the next several meetings the membership focused on several key objectives including: Developing a common understanding of current and developing data management systems; establishing workgroup structure and schedule; and establishing subcommittees to focus on specific tasks.

The first three meetings of the workgroup (September 2011, November 2011 and January 2012) included a series of presentations to provide the membership with an overview of various data management systems and approaches. The following four meetings (April, June, August and December 2012) focused on developing the workgroup charter and collection of baseline information about the data and technology behind each of the existing and/or developing Monitoring Council Portals. Additionally a joint meeting between the DMWG and the three Ecosystem Health workgroups (Wetlands, Estuaries, and Streams Rivers and Lakes) was held in November 2012 to explore the value of developing a common GIS layer for aquatic resources to be shared by each of the workgroups and to establish effective channels of communication between workgroups.

The DMWG accomplished the following key items since its inception:

- Developed and adopted a workgroup charter;
- Established two subcommittees: (1) Portals/Tools and (2) Data Standards;
- Established a process to inventory and assess data and technologies in use by existing and forthcoming theme specific workgroups;
- Held a joint meeting between the DMWG and the three Ecosystem Health workgroups.

Recommendations to the Council

- All existing and future theme specific workgroups should maintain a designated data liaison that also participates in meetings of the DMWG. The data liaison will ensure a consistent two-way exchange of information between workgroups.
- The common GIS layer for aquatic resources being developed should be shared with other workgroups to determine its utility for other portals requiring a similar GIS layer. The theme specific workgroups, in cooperation with the DMWG should work to update or modify the common layer to serve the needs of multiple workgroups.
- The DMWG notes that barriers to sharing of data, particularly outside of State agencies remains a source of trepidation in some cases. Specific concerns include potential for: misunderstanding of data quality and appropriate use; legal liability; extra workload associated with preparing data for use by non-experts or in portals; and lack of required expertise (e.g. preparation of data for web access, establishment of web services, etc.). These concerns may be addressed in part through the development model language regarding data use constraints, metadata and data documentation standards. The DMWG recommends the Council shepherd a process to develop model language, in consultation with the theme specific workgroups, accounting for specific issues or limitations of data sharing and use relevant to their needs.

Attachment 1 - List of Organizations Participating in the DMWG in 2012

<i>State Agencies</i>
<ul style="list-style-type: none"> • California Department of Fish and Game • California Department of Public Health • California Department of Water Resources • California Natural Resources Agency • California State Water Resources Control Board (SWRCB) • California Technology Agency • Central Valley Regional Water Quality Control Board
<i>Public/Private Organizations</i>
<ul style="list-style-type: none"> • California Ocean Science Trust (OST), MPA Monitoring Enterprise • Klamath Basin Monitoring Program
<i>Research and Academic Organizations</i>
<ul style="list-style-type: none"> • California State University (CSU), Council on Ocean Affairs, Science and Technology (COAST) • California State University, Northridge (CSUN), Center for Geographic Studies • Humboldt State University • Lawrence Berkeley National Laboratory • San Francisco Estuary Institute (SFEI) / Aquatic Science Center (ASC) • San Francisco State University • Southern California Coastal Ocean Observing System (SCCOOS) • Southern California Coastal Water Research Project (SCCWRP)
<i>Non-Governmental Organizations (NGOs)</i>
<ul style="list-style-type: none"> • Council for Watershed Health • Ecolayers • Heal the Bay
<i>Private Industry and Consultants</i>
<ul style="list-style-type: none"> • 34 North • Esri • IBM • Microsoft • RimuDB

California Water Quality Monitoring Collaboration Network

2012 Year End Report to the California Water Monitoring Council

Prepared by Erick Burres, CWQMCN Facilitator

The Water Quality Monitoring Collaboration Network (WQMCN) is a voluntary monthly Webinar that allows members of the monitoring community to network and exchange information and ideas on topics of interest. The Network helps support a state framework to coordinate consistent and scientifically defensible methods and strategies for improving water quality monitoring, assessment, and reporting. During 2012 twelve webinars were presented. All of the webinars were recorded and made available on the Network's webpage, www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/.

Topics addressed during 2012 included quality assurance, water quality monitoring programs, monitoring projects, models, monitoring support tools, bioassessments along with reporting and data/information sharing. The Network collaborated with SWAMP, the Aquatic Bioassessment Laboratory at California State University Chico, the Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT) and their partners to present taxonomy webinars with live video feed from the presenter's microscope. This unique training experience expands current taxonomy training opportunities. This has been well received due to the nature of participating in a training event without the need or costs for travel along with the benefit of being able to review the webinar recording. To our knowledge this collaborative effort is the first of its kind.

Through the State Water Board's Clean Water Team's YouTube channel, www.youtube.com/cleanwaterteamvideos, recordings of webinars featuring or supporting citizen monitoring were added. This allowed seven new videos to be added to the channel. This extra visibility and access to past webinars, furthered support for citizen monitoring and provided new value to the highlighted program's presentation.

In April, 2012, the National Water Quality Monitoring Council held its 8th National Monitoring Conference. The Network was invited to provide both a presentation and a poster, *Strengthening Regional Monitoring Programs through the Development of a Collaboration Network: The California Water Quality Monitoring Collaboration Network*, at this premier national forum. In addition, the Network was highlighted during a pre-conference workshop presented by the State Water Board's Clean Water Team, *Implementing Web-based Digital Technologies for Volunteer Monitoring, Watershed Stewardship Organizations and Agencies*. Water quality monitoring leaders from around the world were impressed with the Network's use of technology, the wide variety of topics addressed, and its ability to support collaborations and training efforts at a low cost. Many programs inquired about how they might replicate the Network and many more were interested in how they could benefit from our existing webinar series and webinar recording archive.

The Network has hosted 41 webinars since June, 2009. To learn about the webinar series usefulness and to solicit new webinar topics, a post webinar participant survey was launched during the first half of Fiscal Year 2012-2013. By using an online questionnaire, webinar participants were invited to take a survey for each webinar in which they participated. Through the survey it was learned that 88% found the quality of the information presented in the webinar to be of “high” or “very high quality” and 63% found the webinar they participated in to be “very useful” to “extremely useful” in addressing their needs as related to the webinar topic. Participants also showed a high likelihood that they would recommend the webinar’s recording to their colleagues. Providing a glimpse of the value to collaborations and networking, nearly a fifth of the participants surveyed (19%) learned about a given webinar through a forwarded email announcement. In addition, fifteen webinar topics, such as delta modeling and natural source identification, were suggested for future webinars.

Efforts made in 2012 continued to provide support and networking opportunities for water quality monitoring programs in California while also expanding the Network’s value to a wider water quality monitoring audience. It is envisioned that the Network and its webinar series will remain an asset.

8th National Monitoring Conference “Water: One Resource-Shared Effort-Common Future” – Portland, CA

*Strengthening Regional Monitoring Programs through the Development of a Collaboration Network:
The California Water Quality Monitoring Collaboration Network*

- Abstract: http://acwi.gov/monitoring/conference/2012/abstracts/abstracts_2012_sessionO1.pdf
- Presentation: <http://acwi.gov/monitoring/conference/2012/O1/O1Burres1.pdf>
- Poster: www.waterboards.ca.gov/mywaterquality/monitoring_council/collaboration_network/docs/2012nwmcposter.pdf

Implementing Web-based Digital Technologies for Volunteer Monitoring and Watershed Stewardship Organizations and Agencies

- http://acwi.gov/monitoring/conference/2012/ESA9_Burres_TitleLink.pdf

2012 California Water Quality Monitoring Collaboration Network Webinars

- The Regional Monitoring Program: A Collaborative Effort Providing Water Quality Regulators in the San Francisco Bay Area with Information They Need
- Identification of Thresholds of Adverse Effect of Macroalgal Blooms on Benthic Habitat Quality of Estuarine Intertidal Flats
- The Central Valley Regional Water Quality Control Board’s Safe to Swim Program
- Advances in the Application of the USGS SPARROW Model in California
- Guidelines for taxonomic determination of *Baetis adonis* and *Baetis tricaudatus* specimens in Southern California SWAMP bioassessment samples
- Hazard Analysis and Critical Control Point Planning (HACCP) - Reducing the risk of spreading invasive species in natural resource activity pathways.

- Introducing the New My Water Quality Web Portal “Are Our Stream and River Ecosystems Healthy?”
- Water Quality Goals
- StreamStats: A streamflow web application
- Finding the Right Funders
- Ecological Condition Assessments of California’s Perennial Wadeable Streams: Highlights from the Surface Water Ambient Monitoring Program’s Perennial Streams Assessment (PSA)
- An Introduction to the Concept of Reporting Limits